CLAIMS:

1.   Method for generating a primary binary signal having a predetermined spectral shape in a predetermined frequency range, in particular having a notch in the power spectrum in a predetermined frequency range, wherein data-words are modulated into channel-words forming the channel bitstream of the primary binary signal and wherein the modulation of the data-words is chosen such that the predetermined spectral shape of the channel bitstream of the primary binary signal is achieved by using an evaluation criterion based on a spectral weight function the shape of which is tailored to the spectral extent of the channel bitstream of a secondary binary signal.

2.   Method according to claim 1,
comprising the steps of
a)   selection of a channel-word out of a set of possible channel-words that can be associated at a given data-word location,
b)   determining a sum value for the channel-word as criterion for the selection of the channel-word,
c)   repeating steps a) to c) several times by selecting different channel-words and comparing the sum values for the different channel-words and
d)   selecting the channel-word resulting in the lowest sum value in step c).

3.   Method according to claim 2,
wherein the sum value is determined by bit-by-bit recursive calculation of a convolution sum with tap-coefficients derived from using the spectral weight function.

4.   Method according to claim 2,
wherein the set of possible channel-words at a given data-word location is generated by the encoding freedom of the modulation code used, either in the choice of merging bits, or in the use of substitution tables or in the use of extra control bits which are used in the channel modulation.

5.   Method according to claim 2,

wherein the set of possible channel-words at a given data-word location is generated by

variation of the data-words over a set of possible values.

5   6.   Method according to claim 2,

wherein steps a) to d) are repeated for several or all allowed channel-word selections for a

given data-word location in the binary signal.

7.   Method according to claim 1,

10   wherein the weight function is a Gaussian function.

8.   Method according to claim 2,

wherein the determination of the sum value by bit-by-bit recursive calculation of the value

$$C_k = 1 + C_{k-1} + b_k \sum_{j=1}^{M} d_j \, b_{k-j}$$

15   wherein

C is the sum value,

k is a counter of the bit position in the channel-word,

j is a counter used in the evaluation of the sum value,

b_k is the bipolar bit value of the bit a position k in the channel-word,

20   M is the limit value of the evaluation of the sum and

d_j is a filter coefficient

$$d_j = 2 \cos(2\pi \, j \, v_n) \exp(-2\pi^2 \sigma^2 j^2)$$

wherein

is the frequency around which the spectral shape shall be determined and

σ is the standard deviation of the weight function.

25

9.   Method according to claim 1,

wherein the primary binary signal is used in the lead-in area of an optical record carrier.

10.   Method according to claim 9,

30   wherein the secondary binary signal is a wobble signal realized by wobbling the information

track and stored in a wobble channel, wherein the weight function is determined such that the

power spectrum of the wobble signal fits in the spectral notch generated in the primary binary

signal and wherein the wobble channel is used for storing data in the lead-in area of the record carrier.

11.   Method according to claim 10,

5   wherein a wobble key for decryption of data stored in the data area of the record carrier is stored in the wobble channel.

12.   Method according to claim 10 or 11,

wherein the weight function is determined such that interferences between the wobble

10   channel and the primary binary signal are prevented.

13.   Method according to claim 1,

wherein the weight function is determined such that the power spectrum of the primary binary signal has a wide notch at a predetermined frequency to which the secondary binary

15   signal can be accommodated spectrally.

14.   Device for generating the channel bitstream of a primary binary signal having a predetermined spectral shape in a predetermined frequency range, in particular having a notch in the power spectrum in a predetermined frequency range, wherein data-words are

20   modulated into channel-words forming the channel bitstream of the primary binary signal and wherein the modulation of the data-words is chosen such that the predetermined spectral shape of the channel bitstream of the primary binary signal is achieved by using an evaluation criterion based on a spectral weight function the shape of which is tailored to the spectral extent of the channel bitstream of a secondary binary signal.

25

15.   Primary binary signal having a predetermined spectral shape in a predeter- mined frequency range, in particular having a notch in the power spectrum in a predetermined frequency range, wherein data-words are modulated into channel-words forming the channel bitstream of the primary binary signal and wherein the modulation of the

30   data-words is chosen such that the predetermined spectral shape of the channel bitstream of the primary binary signal is achieved by using an evaluation criterion based on a spectral weight function the shape of which is tailored to the spectral extent of the channel bitstream of a secondary binary signal.

16.   Record carrier for comprising a binary signal according to claim 15.

17.   Record carrier according to claim 16,

wherein the record carrier is an optical record carrier and wherein the primary binary signal is

5   used in the lead-in area of the optical record carrier.

18.   Record carrier according to claim 17,

wherein the secondary binary signal is a wobble signal realized by wobbling the information

track and stored in a wobble channel and wherein the wobble channel is used for storing data

10   in the lead-in area of the record carrier.